

LUMINAIRE LEVEL LIGHTING CONTROLS

Simple Installation

Sensors and control programming are integrated into fixtures for straightforward setup out of the box.

Occupant Comfort

With the ability to adjust each individual fixture, LLLCs boost occupant comfort and productivity.

Flexible Control

Adaptable for changes in space usage, LLLCs reduce cost of change-over to new occupants.

Savings

Energy savings of 25 to 75%, and decreased installation and maintenance costs.

Better Lighting

Overall light quality is improved with LED and sensor light fixtures.

Building Improvement

LLCs can enable emergency lighting, demand response, asset tracking and integrate with other building systems.

SMARTER CONTROLS, BIG BENEFITS

Combining LEDs with integrated controls and sensors, Luminaire Level Lighting Controls (LLLC) offer a single solution that will improve buildings, deliver maximum energy savings and enable long-term flexibility.

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WHAT ARE LLLCS?

Luminaire Level Lighting Controls (LLLC) are lighting products with wirelessly networked integrated sensors, enabling luminaires within the system to communicate with each other. These systems provide multiple control capabilities in one package, from occupancy and vacancy sensing to daylight harvesting and data transmission, as well as combinations of each.

WHY ARE LLLCS THE FUTURE?

- **Strong savings potential:** Preliminary estimates show **25 to 75 percent savings** compared with non-controlled fixtures.
- **Simpler lighting path:** LLLCs address limitations of earlier generations of controls:
 - Pre-programmed settings offer a better **out-of-the-box** experience
 - **Less wiring**
 - Same **basic installation** process as non-controlled fixtures
 - **Wireless features and apps** ease the commissioning process
 - **Finer tuned controls** offer a better customer experience, such as daylight harvesting for even space lighting and continuous dimming, which allows dimming over a continuous range, as opposed to step dimming which only allows for preset increments between off and full output.
 - Each fixture is embedded with sensors and software that work together to adapt to the space and can be **individually controlled** via smartphone or tablet, making it easier for customers to reconfigure as needs change.

WHEN IS A LLLC SYSTEM RIGHT?

For all building types, today's LLLC systems provide the best light quality and most aggressive energy savings currently on the market. They also provide a simple path to multiple control capabilities including:

- **Occupancy & vacancy sensing**
- **Daylight harvesting**
- **Task tuning**
- **Continuous dimming**

LLLC systems can also provide high value non-energy benefits*:

- Asset tracking
- Space utilization planning
- Simple adaptability for new tenants
- Integration with building systems, including HVAC and CO₂ sensing systems
- Integration with building security and emergency response systems such as facial recognition
- Demand response capabilities
- Energy code compliance

**Not all systems have all of the capabilities listed*

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Building types that can benefit from these additional capabilities include:

- **Hospitals**, utilizing asset tracking and space utilization
- **Schools**, for security and emergency response system integration and to enable lighting adjustments throughout the day for optimal learning environments
- **Warehouses**, for asset tracking and demand response
- **Mixed-use office buildings**, which take advantage of LLLC’s building systems integration, demand response, space utilization and lighting flexibility.

WHAT ARE SOME EXAMPLES OF LLLC SYSTEMS?

Design Lights Consortium (DLC) maintains a **Qualified Product List (QPL)** for Networked Lighting Controls that includes a filterable subset for Interior Lighting and LLLC systems (www.designlights.org/lighting-controls). Below is a sample of qualified products on this list as of June 2019; check the QPL regularly for the most complete and up-to-date information.

Acuity Controls nLight and nLight® AIR	LG Sensor Connect
Acuity Controls XPoint™ Wireless	Lutron Vive Wireless Solutions
Digital Lumens LightRules®	RAB Lighting Lightcloud
Enlighted	Signify SpaceWise and EasySense
Eaton WaveLinx Wireless Connected Lighting and LumaWatt Pro	



Enlighted Luminaire Level Lighting Controls installed in the Pacific Tower building in Seattle, Wash.